



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,573	07/23/2003	Jun Yura	240478US3 DIV	6618

22850 7590 01/09/2006

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER

COMPTON, ERIC B

ART UNIT PAPER NUMBER

3726

DATE MAILED: 01/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

E

<b>Office Action Summary</b>	<b>Application No.</b> 10/624,573	<b>Applicant(s)</b> YURA ET AL.	
	<b>Examiner</b> Eric B. Compton	<b>Art Unit</b> 3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/874,990.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 26, 2005, has been entered.

### ***Information Disclosure Statement***

2. The three (3) IDS, submitted Aug. 3, Aug. 19, and Oct. 5, 2005, cite the instant application. Therefore, the Examiner struck it on each.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2, 4-6, 8-10, and 12-14 are rejected under 35 U.S.C. 102(b) as anticipated by U.S. Pat. 5,802,443 to Matsumoto et al.

Art Unit: 3726

Fig. 29 of Matsumoto shows a heating roller. The diameter at the ends is greater than diameter at the center. Furthermore, the thickness at the center 0.75 mm  $((35.0 - 33.5 \text{ mm}) / 2)$  is greater than that of the ends 0.4 mm  $((35.4 - 34.6 \text{ mm}) / 2)$ . As shown, in Figure 20, the roller core is provided with bearings (202) on its outer circumference surface. See Col. 11, lines 24-26. Thus, the roller meets the claimed structural limitations. As to the method of manufacture, the reference discloses,

Usually seamless steel pipes are manufactured by **drawing** to form the wall thickness of 0.7 mm or thicker. In order to thin the thickness of a cylindrical structure, **the outside diameter working is operated using a lathe or centerless grinder**. The thinning of wall thickness without deterioration of roundness is restricted because of collapsing of cylindrical structure due to reduced rigidity in the circumferential direction of the cylindrical structure, that is, the rigidity is too low as a workpiece. In the present invention differently from the above-mentioned thinning, collapsing deformation of a cylindrical structure is prevented by forcibly inserting of supporting members in the cylindrical structure.

Col. 14-15, lines 63-8 (emphasis added).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 1, 3, 5-6, 7, 9-10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. 6,119,869 to Curry et al ("Curry") in view of Applicant's Admitted Prior Art (AAPA).

Curry discloses a fuser roller having an internal heating element, wherein the

Art Unit: 3726

center portion is thicker than the end portions. 'The rolls of the present invention provide a simple way for regulating the fuser temperature such that it is uniform across the length of the hot roll, is uniform between the transitory (heat up) state and the steady state, and minimizes hot roll temperature overshoot during the transitory phase."

Abstract. The disclosure indicates the roller can be formed from a single material and smoothly and gradually reduced from the center to the end, *i.e.*, tapered See Col. 9, lines 6-12. Curry discloses that the roller is connected to the fuser assembly at ends (103). Col. 6, lines 50-52. This is a rotatable connection, since the roller is designed to rotate with respect to the fuser assembly. Furthermore, it is disclosed, "For simplicity, uniform thermal load during printing is assumed in design Step 1 and Step 2. But, the thermal load is actually not uniform because the nip width is wider at the end portions and narrower at the center portion and heat is conducted at the **roller ends to the support bearings and support structure for the roll.**" Col. 9 lines 25-30 (emphasis added). See *also* U.S. Pat. 6,157,805, Fig. 9.

However, Curry does not explicitly disclose how the roller is forming, nor specifically the steps of drawing the core nor cutting the outer surface to form the roller. AAPA, as found on pages 1-2 of the specification, discloses conventional methods of forming rollers of this type having a heating element. AAPA notes that it is known in the art to thinning, *i.e.*, drawing the core to decrease heat capacity. Section [0004]. Furthermore, AAPA notes it is known to cut the outer circumference surface of the center portion to form a contour in the nip to reduce wrinkles. Sections [0004-0005].

Art Unit: 3726

Regarding claim 1, 5 and 9, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have produced the heating roller of Curry by drawing the core and cutting the outer surface, in light of the teachings of AAPA, in order to form the roller having reduced heat capacity and to reduce wrinkles.

Regarding claims 6 and 10, as shown in Figure 6 of Curry shows the inside diameter of the core is smaller in the center portion than at the end portions.

Regarding claims 3, 5, 7 and 11, as shown in Figure 6 of Curry, the outside diameter is substantially constant in the shaft direction of the core.

### ***Response to Arguments***

7. Applicant's arguments filed July 26, 2005, have been fully considered but they are not fully persuasive.

First, Applicant's argument with respect to Bardutsky, Rise and Beery have been found persuasive, and the rejections withdrawn.

However, with respect to Curry, Applicant's contention is that one cannot reasonably presume that bearings are placed on the ends (103). A detailed read of the reference shows this is not the case.

Curry discloses that the roller is connected to the fuser assembly at ends (103). Col. 6, lines 50-52. This is a rotatable connection, since the roller is designed to rotate with respect to the fuser assembly. Furthermore, it is disclosed, "For simplicity, uniform thermal load during printing is assumed in design Step 1 and Step 2. But, the thermal load is actually not uniform because the nip width is wider at the end portions and

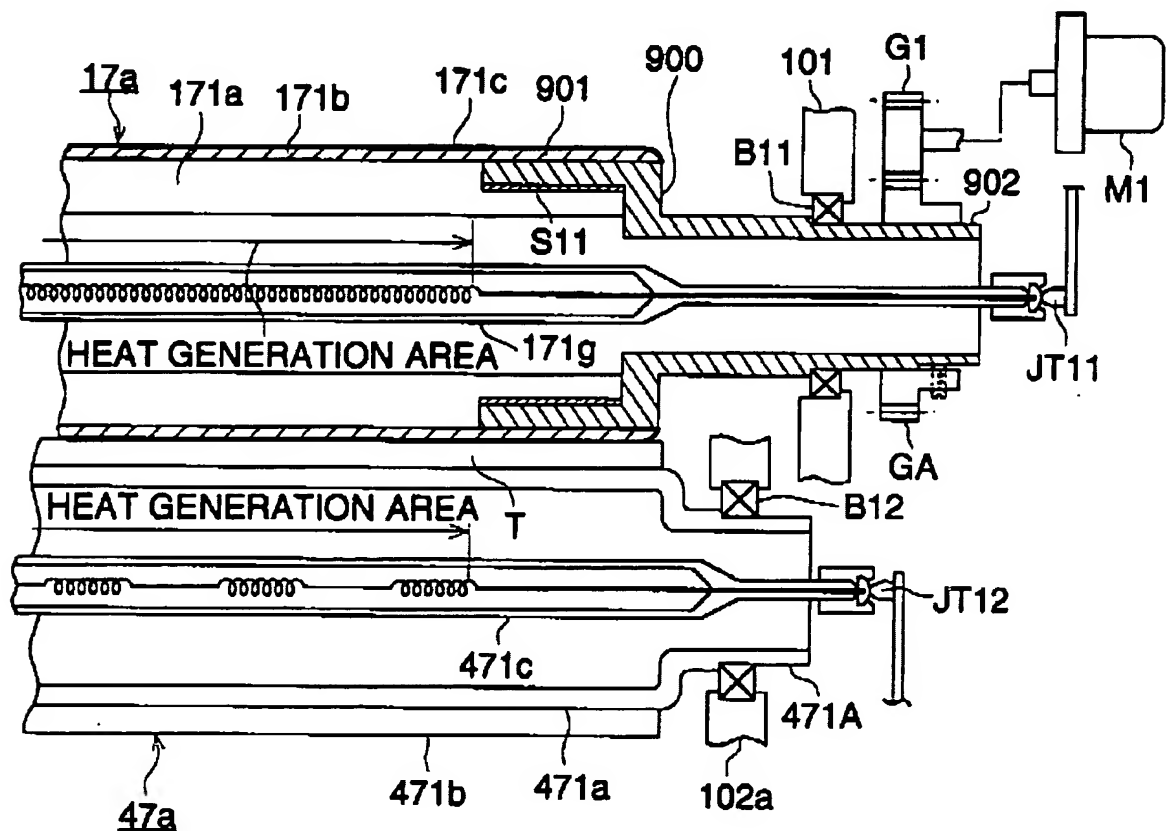
Art Unit: 3726

narrower at the center portion and heat is conducted at the *roller ends to the support bearings and support structure for the roll.*" Col. 9 lines 25-30 (emphasis added).

Thus, the reference expressly recognizes the use of bearing.

It is known in the art that rollers of this type, having a stepped end, are supported by bearings. For example, see U.S. Pat. 6,157,805, Figure 9, below.

# FIG. 9



***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B. Compton whose telephone number is (571) 272-4527. The examiner can normally be reached on M-F 9-5.



Art Unit: 3726

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Jimenez can be reached on (571) 272-4530. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Eric B. Compton  
Primary Examiner  
Art Unit 3726

ebc